

LIVESTOCK REARING PATTERNS IN THE FRINGE

VILLAGES OF KAZIRANGA NATIONAL PARK

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ABSTRACT

A research was undertaken to study the livestock rearing patterns amid fringe villages in 4 selected forest range areas of Kaziranga National Park, namely Agoratoli range, Kohora range, Bagori range and Burapahar (Ghurakati range). It was found that majority of the respondents mostly practiced semi rangesystem of rearing livestock followed by open range with tying at night and close system. Meanwhile, respondents mainly preferred sheds separate from their house but in same courtyard (71%) for the livestock followed by sheds attached to the house (18%) and sheds at same courtyard and below the residential place (11%). While in the case of grazing area for livestock, respondents mainly preferred cultivated area after harvesting (69%) followed by nearby open field (23%) and park area (8%). It was also seen that majority of the respondents had medium level of family involvement in livestock rearing. Meanwhile most of the respondents fed locally available feed (97%) to their livestock while rest fed a mixture of locally available feed and concentrate feed.

KEYWORDS: Rearing, Sheds, Grazing, Family Involvement, Feeding, Livestock, Kaziranga National Park and Fringe Villages

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INTRODUCTION

Kaziranga National Park was established in the year 1908 and host two-thirds of the world renowned Great one-horned rhinoceros *Rhinoceros unicornis*. Around 4 tea gardens and 184 bordering villages are influenced by the park. The nearby areas are not well developed due to inaccessibility and closeness to the park has forbidden setup of industries and it has led to agriculture and animal husbandry as the solitary means of

livelihood for the greater part of the population nearby the park. The people are yet to gain from the huge amount of money invested by the government and various agencies around the world for the development of the region. Economic conditions of the people are generally poor with poor yield from livestock due to poor genetic pool and absence of scientific method of rearing, despite the fact that the area is bequeathed with rich natural flora. As of now, various studies have been done in the area of general sociology, archaeological, geographical and ecological aspects along with special emphasis on clinical areas but less study has been done on livestock rearing pattern, type of sheds, grazing area and type of feed given to the livestock. As a result, the aforementioned investigation was conducted.

MATERIALS AND METHODS

This investigation was undertaken to study the livestock rearing patterns among fringe villagers in 4 selected forest range areas of Kaziranga National Park, namely Agoratoli range, Kohora range, Bagori range and Burapahar (Ghurakati range). Basically, a purposive stratified random sampling technique was used for the study. From the 4 range areas, 5 villages namely Agoratoli village-I, Agoratoli village-II, Kohora village, Bagori village and Burapahar village were selected on random basis. Subsequently from each of the 5 villages, 20 numbers of livestock rearers were randomly selected making the sample size of 100. Data were personally collected by the researcher. Reliability of the interview schedule was worked out by conducting a pre-testing in the fringe village of Pobitora Wildlife Sanctuary by using test-retest method and was found out to be $r = 0.89$. Further content validity was seen while preparing the final schedule. After collection, they were arranged accordingly and data were analysed and inferences were drawn accordingly.

RESULTS AND DISCUSSIONS

System of Rearing Adopted by the Respondents for Their Livestock

It was depicted from the Table 1 that in the pooled sample, out of the respondents who reared cattle, majority (95 per cent) of them reared cattle in an open range system with tying at night whereas only 5 per cent reared cattle in a semi range system. While in case of buffalo owner cent per cent preferred semi range system. The respondents who possessed goats, majority (60 percent) of them reared in semi range system and the rest 38 per cent and 2 per cent reared them in an open system with tying at night and in closed system respectively. The respondents, who reared pigs, had adopted semi range system only. In case of poultry, most of the respondents (71 per cent) preferred semi range system while the rest 26 per cent and 3 per cent reared poultry in open system with tying at night and in closed system respectively. As the pooled sample showed almost similar trend with the five fringe villages, it can be therefore, said that, as a whole the majority of the respondents preferred semi range system followed by open system with tying at night and close system for rearing of their livestock. Sarkar *et. al.* (2006) found that yaks were maintained as per semi range system of management while Alabi *et. al.* (2007) in their study considered semi intensive system to be the best way of managing poultry. Saikia (2007) stated that pigs are reared by the majority (47.5 per cent) of the respondents in semi-open system

Table 1: Distribution of Respondents on the Basis of livestock Rearing Patterns

Settings	Livestock	Open Range System	Open Range with Tying at Night	Semi Range	Close System
Agoratoli-I Village	Cattle	0	17 (85)	3 (15)	0
	Buffalo	0	0	1(100)	0
	Goat	0	5(36)	9 (64)	0
	Pigs	0	0	9 (100)	0
	Poultry	0	2 (25)	5(62.5)	1(12.5)
Agoratoli-II Village	Cattle	0(0)	20(100)	0(0)	0(0)
	Buffalo	0(0)	0(0)	0(0)	0(0)
	Goat	0(0)	2(18)	9 (82)	0(0)
	Pigs	0(0)	0(0)	5(100)	0(0)
	Poultry	0(0)	5(38.5)	8(61.5)	0(0)
Kohora Village	Cattle	0(0)	20(100)	0(0)	0(0)
	Buffalo	0(0)	0(0)	0(0)	0(0)
	Goat	0(0)	3 (60)	2(40)	0(0)
	Pigs	0(0)	0(0)	11(100)	0(0)
	Poultry	0(0)	0(0)	8(100)	0(0)
Bagori Village	Cattle	0(0)	19(100)	0(0)	0(0)
	Buffalo	0(0)	0(0)	0(0)	0(0)
	Goat	0(0)	2(25)	5(62.5)	1(12.5)
	Pigs	0(0)	0(0)	8(100)	0(0)
	Poultry	0(0)	0(0)	2(100)	0(0)
Burapahar Village	Cattle	0(0)	14(87.5)	2(12.5)	0(0)
	Buffalo	0(0)	0(0)	0(0)	0(0)
	Goat	0(0)	5(71)	2(29)	0(0)
	Pigs	0(0)	0(0)	2(100)	0(0)
	Poultry	0(0)	2(50)	2(50)	0(0)
Pooled value	Cattle	0(0)	90(95)	5(5)	0
	Buffalo	0(0)	0(0)	1(100)	0(0)
	Goat	0(0)	17(38)	27(60)	1(2)
	Pigs	0(0)	0(0)	35(100)	0(0)
	Poultry	0(0)	9(26)	25(71)	1(3)
	RANK	-	II	I	III

Figures in parentheses indicate percentage.

TYPE OF SHED

It could be seen from the Table 2 that in all the five fringe villages i.e., Agoratoli-I and II, Kohora, Bagori and Burapahar and including pooled sample, majority (60 per cent, 75 per cent, 70 per cent, 85 per cent, 65 per cent and 71 per cent respectively) of the respondents had livestock sheds which were separated from the main house but were located in the same courtyard. In Burapahar 35 per cent of the respondents and 15 per cent of the respondents in Agoratoli-II, Kohora and Bagori were having sheds attached to their main house, whereas in Agoratoli-I, only 10 per cent of the respondents had shed attached to their house. Interestingly in Agoratoli-I, Agoratoli-II and Kohora, 30 per cent, 10 per cent and 15 per cent of the respondents respectively were keeping their livestock below their dwelling house. This finding was similar to that of Srivastava *et.al.* (2002) where pigs shared night shelter below human dwelling.

Table 2: Distribution of Respondents on the Basis of Type of Shed

Settings	Shed type				
	Inside The Same House with Residents	Attached to the House	Separate but Same Courtyard	Completely Separate but can be seen and managed from house	Same courtyard and below the residential place
Agoratoli-I Village	0(0)	2(10)	12(60)	0(0)	6(30)
Agoratoli-II Village	0(0)	3(15)	15(75)	0(0)	2(10)
Kohora Village	0(0)	3(15)	14(70)	0(0)	3(15)
Bagori Village	0(0)	3(15)	17(85)	0(0)	0(0)
Burapahar Village	0(0)	7(35)	13(65)	0(0)	0(0)
Pooled	0(0)	18(18)	71(71)	0(0)	11(11)

Figures in parentheses indicate percentage

GRAZING AREA FOR LIVESTOCK

It was observed that (Table 3), the grazing areas for the livestock in Kaziranga fringe villages were limited. Therefore, most of the villagers allowed their livestock to graze in the cultivated field after harvesting of crops. However, during cultivation time, they either tied up their livestock in their sheds or allowed them to graze in a nearby open field. It was seen that, during the period of flood there happened to be shortage of fodders in the fringe areas so, many of the animals were found to be grazed nearby the National Highway or near the elevated area of Karbi hills. Majority (45 per cent in Agoratoli-I, 80 per cent in Agoratoli-II, 60 per cent in Kohora, 90 per cent in Bagori and 70 per cent in Burapahar) of the respondents allowed their livestock to graze in the cultivated field after harvesting. And rest of the respondents let loose their livestock in the nearby open field for grazing. It was also found that, 25 percent and 15 per cent of the respondents in Agoratoli-I and Kohora village let loose their cattle nearby park area respectively. Since, Agoratoli-I and Kohara villages were much close to the park boundary (nearly 200 meter distance), their livestock often entered the park for grazing. As in the pooled sample, it was found that majority (69 per cent) of the respondents allowed their livestock to graze in the cultivated field areas whereas the rest 23 per cent and 8 per cent of the respondents let loose their livestock in the nearby open field and in the park area respectively. These findings were more or less similar with Anonymous (1994) and Singh (2000) where cattle usually graze in the fields after the crops have been reaped.

Table 3: Distribution of Respondents on The Basis of Livestock Grazing Area

Settings	Nearby Open Field	Park Area	Cultivated Area After Harvesting
Agoratoli-I Village	6(30)	5(25)	9(45)
Agoratoli-II Village	4(20)	0(0)	16(80)
Kohora Village	5(25)	3(15)	12(60)
Bagori Village	2(10)	0(0)	18(90)
Burapahar Village	6(30)	0(0)	14(70)
Pooled	23(23)	8(8)	69(69)

Figures in parentheses indicate percentage.

DEGREE OF FAMILY INVOLVEMENT IN LIVESTOCK REARING

From the Table 4 it was depicted that majority of the respondents i.e. 75 per cent in Agoratoli-I, 95 per cent in Agoratoli-II, 80 per cent in Kohora, 65 per cent in Bagori, 60 per cent in Burapahar and 68 per cent in the pooled sample had medium level of family involvement. The reason is that in a family, some of the members were daily wagers, school going children, olds and some were cultivators. So, high level of family involvement was not seen among the respondents

of the fringe villages. The findings were more or less similar to Saikia (2007) where majority 50 per cent of the respondents managed their pigs through family members and Payeng (2011) found that majority (76.25 per cent) of the respondents managed their pigs through family labour.

Mean difference 'F' value was found to be 1.553^{NS} which revealed that there existed no significant difference among the villages in terms of degree of family involvement.

Table 4: Distribution of Respondents on the Basis of Degree of Family Member Involvement

Settings	Low	Medium	High	Mean	S.D.	Range	'F' Value
Agoratoli-I Village	5(25)	15(75)	0(0)	54	14.17	27-67	1.553 ^{NS}
Agoratoli-I Village	1(5)	19(95)	0(0)	59.33	8.06	23-67	
Kohora Village	3(15)	16(80)	1(5)	56	10.9	27-67	
Bagori Village	4(20)	13(65)	3(15)	55.66	11.7	33-67	
Burapahar Village	7(35)	12(60)	1(5)	50.0	14.91	27-67	
Pooled	20(20)	68(68)	12(12)	55	12.33	27-67	

Figures in parentheses indicate percentage.

FEEDING

From the Table 5 it was depicted that in all the five fringe villages, overwhelming majority of the respondents fed their livestock on locally available feeds only. Pooled sample showed that 97 per cent of the respondents were using locally available feeds for their livestock whereas only 3 per cent of the respondents fed their livestock by both locally available and concentrate feeds. The main reason is that, overwhelming majority of the respondents in the Kaziranga fringe villages were having low family income and most of them had indigenous breed of livestock, so, they could not afford much in feeding of livestock. More or less similar findings were reported by William *et. al.* (1997) where, most of the farmers in the developing countries were using fibrous by-product resulting from crop cultivation for livestock during dry season and Singh *et. al.* (1998) observed that *Porteresia coarctata*, a halophytic wild grass was used as livestock forage by the people in the mangrove areas of West Bengal.

Table 5: Distribution of Respondents on the Basis of Feeding of Livestock

Settings	Concentrate Feed	Locally Available Feed	Both
Agoratoli-I Village	0 (0)	20 (100)	0 (0)
Agoratoli-II Village	0 (0)	19(95)	1(5)
Kohora Village	0 (0)	20 (100)	0 (0)
Bagori Village	0 (0)	19(95)	1(5)
Burapahar Village	0 (0)	19(95)	1(5)
Pooled	0 (0)	97(97)	3(3)

Figures in parentheses indicate percentage.

CONCLUSIONS

From the study it can be concluded that majority of the respondents in fringe villages of Kaziranga National Park practiced semi range system of rearing livestock followed by open range with tying at night and close system. They favored mainly sheds separate from their house but in same courtyard for the livestock followed by sheds attached to the house and shed at same courtyard and below the residential place. Livestock foraged from the cultivated area but only after harvesting followed by nearby open field and park area. While majority of them had medium level of family involvement

in livestock rearing, they mostly fed their animals locally available feed with some instances of feeding mixture of both locally available feed with concentrate feeds. Therefore appropriate extension strategies with the help of appropriate authorities along with necessary economic inputs, scientific training and veterinary aids could be incorporated for the development of the livestock through scientific intervention in the area.

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